Notice of Allowability	Application No.	Applicant(s)	
	09/420,912	FORD, JON ALLEN	
	Examiner	Art Unit	
	Michael C. Heck	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *a Request for Continued Examnination dated 8/22/05*.

2. ☒ The allowed claim(s) is/are *1-24,27-31 and 36-61*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. David Volejnicek, Reg. No. 29335, on 19 October 2005.

The application has been amended as follows:

- On page 8, line 22 of the specification, delete "$A_{1,n}$" and insert -- $A_{1,i}$ --.

The Claims have been amended as follows:

1. (Currently Amended) A method of selecting a resource for a work item, comprising:

determining by processor available resources that possess skills needed by the work item;

for each of the determined resources, determining by processor a business value *RSBV* of having the resource service the work item, the business value being a measure of qualification of the resource for servicing the work item based on skills of the resource and skill requirements of the work item, wherein $RSBV_n = \sum_{i=1}(A_{n,i} x BR_{1,i})$, where $A_{n,i}$ represents the skill level of resource *n* for skill

i, and $BR_{1,i}$ represents a skill weight for the work item for skill *i*, across all defined skills;

for each of the determined resources, determining by processor a value *RTV* to the resource of servicing the work item, the value to the resource being a measure of how serving the work item by the resource helps or hurts goals of the individual resource, wherein ~~the goals of the resource include per-skill time-allocation goals of the resource~~ $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$, where $T_{n,i}$ represents a value of resource *n* for a resource treatment *i*, and $TW_{n,i}$ represents a weight of resource *n* for resource treatment *i*, across all resource treatments; and

selecting by processor a determined resource that has a best combined value of the business value and the value to the resource, to serve the work item.

9. (Currently Amended) A method of selecting a resource for a work item, comprising:

determining by processor available resources that possess skills needed by the work item;

for each of the determined resources, determining by processor a business value *RSBV* comprising a sum $\sum$ across all skills *i* of a product of a skill level $A_{n,i}$ of the resource *n* in the skill and a skill weight $BR_{1,i}$ of the work item for the skill, *wherein* $RSBV_n = \sum_{i=1}(A_{n,i} x BR_{1,i})$;

for each of the determined resources, determining by processor a resource treatment value *RTV*, the resource treatment value being a measure of how the resource is meeting goals of the individual resource, the resource treatment value comprising a sum $\sum$ across all of a plurality of resource treatments *i* of a product of a value $T_{n,i}$ of the resource *n* for the resource treatment and a weight $TW_{n,i}$ of the work item for how much weight said resource treatment has relative to others of the resource treatments ~~and how much weight the resource treatments have relative to a different weight of the business value,~~ *wherein* $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$; and

selecting by processor a determined resource that has a best combined score of its business value and its resource treatment value, to serve the work item.

13. (currently amended) ~~The method of claim 1 further including a~~ *A* method of selecting a work item for a resource, comprising:

determining by processor available work items that need skills possessed by the resource;

for each of the determined work items, determining by processor a business value *WSBV* of having the resource service the work item, the business value being a measure of qualification of the resource for servicing of the work item based on skills of the resource and skill requirements of the work item,

wherein $WSBV_n = \sum_{i=1}(A_{1,i} x BR_{n,i})$, where $A_{1,i}$ represents the skill level of the resource for skill i, and $BR_{n,i}$ represents a skill weight for the work item n for skill i, across all defined skills;

for each of the determined work items, determining by processor a value WTV to the work item of being serviced by the resource, the value to the work item being a measure of how the work item is meeting goals of the individual work item, wherein ~~the goals of the work item include how long the work item has been waiting for service, how long the work item may have to wait for service, and how much the work item has exceeded its target wait time~~ $WTV_n = \sum_{i=1}(C_{n,i} x CW_{n,i})$, where $C_{n,i}$ represents a value of a work item n for a work item treatment i, and $CW_{n,i}$ represents a weight of work item n for work item treatment i, across all work item treatments; and

selecting by processor a determined work item that has a best combined value of the business value and the value to the work item to be served by the resource.

- Claim 14, line 2, delete "determining by processor business value", and insert -- determining by processor a business value --.

21. (currently amended) A method of selecting a work item for a resource, comprising;

determining by processor available work items that need skills possessed by the resource;

for each of the determined work items, determining by processor a business value *WSBV* comprising a sum $\sum$ across all skills *i* of a product of a skill level $A_{1,i}$ of the resource *n* in the skill and a skill weight $BR_{n,i}$ of the work item for the skill, *wherein* $WSBV_n = \sum_{i=1} (A_{1,i} x BR_{n,i})$;

for each of the determined work items, determining by processor a work item treatment value *WTV*, the work item treatment value being a measure of how the work item is meeting goals of the individual work item, the work item treatment value comprising a sum $\sum$ across all of a plurality of work item treatments *i* of a product of the value $C_{n,i}$ of the work item for the work item treatment and a weight $CW_{n,i}$ of the work item for how much weight said work item treatment has relative to others of the work item treatments ~~and how much weight the work item treatments have relative to a different weight of the business value~~, *wherein* $WTV_n = \sum_{i=1} (C_{n,i} x CW_{n,i})$; and

selecting by processor a determined work item that has a best combined score of its business value and work item treatment value, to be served by the resource.

28. (currently amended) An apparatus for selecting a resource for a work item, comprising:

means for determining available resources that possess skills needed by the work item;

means for determining, for each of the determined resources, a business value *RSBV* of having the resource service the work item, the business value being a measure of qualification of the resource for servicing the work item based on skills of the resource and skill requirements of the work item, wherein $RSBV_n = \sum_{i=1}(A_{n,i} x BR_{1,i})$, where $A_{n,i}$ represents the skill level of resource *n* for skill *i*, and $BR_{1,i}$ represents a skill weight for the work item for skill *i*, across all defined skills;

means for determining, for each of the determined resources, a value to the resource of servicing the work item, the value to the resource being a measure of how serving the work item by the resource helps or hurts goals of the individual resource, wherein ~~goals of the resource include per-skill time-allocation goals of the resource~~ $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$, *where* $T_{n,i}$ *represents a value of resource n for a resource treatment i, and* $TW_{n,i}$ *represents a weight of resource n for resource treatment i, across all resource treatments*; and

means for selecting a determined resource that has a best combined value of the business value and the value to the resource, to serve the work item.

29. (currently amended) An apparatus for selecting a resource for a work item, comprising:

means for determining available resources that possess skills needed by the work item;

means for determining, for each of the determined resources, a business value *RSBV* comprising a sum $\sum$ across all skills *i* of a product of a skill level $A_{n,i}$ of the resource *n* in the skill and a skill weight $BR_{1,i}$ of the work item for the skill, *wherein* $RSBV_n = \sum_{i=1}(A_{n,i} x BR_{1,i})$;

means for determining, for each of the determined resources, a resource treatment value *RTV*, the resource treatment value being a measure of how the resource is meeting goals of the individual resource, the resource treatment value comprising a sum $\sum$ across all of a plurality of resource treatments *i* of a product of a value $T_{n,i}$ of the resource *n* for the resource treatment and a weight $TW_{n,i}$ of the work item for how much weight said resource treatment has relative to others of the resource treatments ~~and how much weight the resource treatments have relative to a different weight of the business value~~, *wherein* $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$; and

means for selecting a determined resource that has a best combined score of its business value and its resource treatment value, to serve the work item.

30. (currently amended) ~~The apparatus of claim 28 further including an~~ *An* apparatus for selecting a work item for a resource, comprising:

means for determining available work items that need skills possessed by the resource;

means for determining, for each of the determined work items, a business value *WSBV* of having the resource service the work item, the business value being a measure of qualification of the resource for servicing of the work item based on skills of the resource and skill requirements of the work item, *wherein* $WSBV_n = \sum_{i=1}(A_{1,i} x BR_{n,i})$, *where* $A_{1,i}$ *represents the skill level of the resource for skill i, and* $BR_{n,i}$ *represents a skill weight for the work item n for skill i, across all defined skills*;

means for determining, for each of the determined work items, a value *WTV* to the work item of being serviced by the resource, the value to the work item being a measure of how the work item is meeting goals of the individual work item, wherein ~~the goals of the work item include how long the work item has been waiting for service, how long the work item may have to wait for service, and how much the work item has exceeded its target wait time~~ $WTV_n = \sum_{i=1}(C_{n,i} x CW_{n,i})$, *where* $C_{n,i}$ *represents a value of a work item n for a work item treatment i, and* $CW_{n,i}$ *represents a weight of work item n for work item treatment i, across all work item treatments*; and

means for selecting a determined work item that has a best combined value of the business value and the value to the work item to be served by the resource.

31. (currently amended) An apparatus for selecting a work item for a resource, comprising:

means for determining available work items that need skills possessed by the resource;

means for determining, for each of the determined work items, a business value *WSBV* comprising a sum $\sum$ across all skills *i* of a product of a skill level $A_{1,i}$ of the resource *n* in the skill and a skill weight $BR_{n,i}$ of the work item for the skill, *wherein* $WSBV_n = \sum_{i=1}(A_{1,i} x BR_{n,i})$;

means for determining, for each of the determined work items, a work item treatment value *WTV*, the work item treatment value being a measure of how the work item is meeting goals of the individual work item, the work item treatment value comprising a sum $\sum$ across all of a plurality of work item treatments *i* of a product of the value $C_{n,i}$ of the work item for the work item treatment and a weight $CW_{n,i}$ of the work item for how much weight said work item treatment has relative to others of the work item treatments ~~and how much weight the work item~~

~~treatments have relative to a different weight of the business value~~, *wherein* $WTV_n = \sum_{i=1}(C_{n,i} x CW_{n,i})$; and

means for selecting a determined work item that has a best combined score of its business value and work item treatment value, to be served by the resource.

36. (currently amended) A computer-readable medium containing instructions which, when executed in a computer, cause the computer to perform selection of a resource for a work item, comprising:

determining available resources that possess skills needed by the work item;

for each of the determined resources, determining a business value *RSBV* of having the resource service the work item, the business value being a measure of qualification of the resource for servicing the work item based on skills of the resource and skill requirements of the work item, wherein $RSBV_n = \sum_{i=1}(A_{n,i} x BR_{1,i})$, where $A_{n,i}$ represents the skill level of resource *n* for skill *i*, and $BR_{1,i}$ represents a skill weight for the work item for skill *i*, across all defined skills;

for each of the determined resources, determining a value *RTV* to the resource of servicing the work item, the value to the resource being a measure of how serving the work item by the resource helps or hurts goals of the individual

resource, wherein ~~the goals of the resource include per-skill time-allocation goals of the resource~~ $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$, where $T_{n,i}$ represents a value of resource *n* for a resource treatment *i*, and $TW_{n,i}$ represents a weight of resource *n* for resource treatment *i*, across all resource treatments; and

selecting a determined resource that has a best combined value of the business value and the value to the resource, to serve the work item.

44. (currently amended) A computer-readable medium containing instructions which, when executed in a computer, cause the computer to perform selection of a resource for a work item, comprising:

determining available resources that possess skills needed by the work item;

for each of the determined resources, determining a business value *RSBV* comprising a sum $\sum$ across all skills *i* of a product of a skill level $A_{n,i}$ of the resource *n* in the skill and a skill weight $BR_{1,i}$ of the work item for the skill, *wherein* $RSBV_n = \sum_{i=1}(A_{n,i} x BR_{1,i})$;

for each of the determined resources, determining a resource treatment value *RTV*, the resource treatment value being a measure of how the resource is meeting goals of the individual resource, the resource treatment value comprising a sum $\sum$ across all of a plurality of resource treatments *i* of a

product of a value $T_{n,i}$ of the resource *n* for the resource treatment and a weight $TW_{n,i}$ of the work item for how much weight said resource treatment has relative to others of the resource treatments ~~and how much weight the resource treatments have relative to a different weight of the business value~~, *wherein* $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$; and

selecting a determined resource that has a best combined score of its business value and its resource treatment value, to serve the work item.

48. (currently amended) ~~The~~ *A* computer-readable medium ~~of claim 36 further~~ containing instructions which, when executed in a computer, cause the computer to perform selection of a work item for a resource, comprising:

determining available work items that need skills possessed by the resource;

for each of the determined work items, determining a business value *WSBV* of having the resource service the work item, the business value being a measure of qualification of the resource for servicing of the work item based on skills of the resource and skill requirements of the work item, *wherein* $WSBV_n = \sum_{i=1}(A_{1,i} x BR_{n,i})$, *where* $A_{1,i}$ *represents the skill level of the resource for skill i, and* $BR_{n,i}$ *represents a skill weight for the work item n for skill i, across all defined skills*;

for each of the determined work items, determining a value *WTV* to the work item of being serviced by the resource, the value to the work item being a measure of how the work item is meeting goals of the individual work item, wherein ~~the goals of the work item include how long the work item has been waiting for service, how long the work item may have to wait for service, and how much the work item has exceeded its target wait time~~ $WTV_n = \sum_{i=1} (C_{n,i} x CW_{n,i})$, *where* $C_{n,i}$ *represents a value of a work item n for a work item treatment i, and* $CW_{n,i}$ *represents a weight of work item n for work item treatment i, across all work item treatments*; and

selecting a determined work item that has a best combined value of the business value and the value to the work item to be served by the resource.

- Claim 49, line 2, delete "determining business value", and insert -- determining *a* business value --.

56. (currently amended) A computer-readable medium containing instructions which, when executed in a computer, cause the computer to perform a selection of a work item for a resource, comprising:

determining available work items that need skills possessed by the resource;

for each of the determined work items, determining a business value *WSBV* comprising a sum $\sum$ across all skills *i* of a product of a skill level $A_{1,i}$ of the resource *n* in the skill and a skill weight $BR_{n,i}$ of the work item for the skill, *wherein* $WSBV_n = \sum_{i=1}(A_{1,i} x BR_{n,i})$;

for each of the determined work items, determining a work item treatment value *WTV*, the work item treatment value being a measure of how the work item is meeting goals of the individual work item, the work item treatment value comprising a sum $\sum$ across all of a plurality of work item treatments *i* of a product of the value $C_{n,i}$ of the work item for the work item treatment and a weight $CW_{n,i}$ of the work item for how much weight said work item treatment has relative to others of the work item treatments ~~and how much weight the work item treatments have relative to a different weight of the business value~~, *wherein* $WTV_n = \sum_{i=1}(C_{n,i} x CW_{n,i})$; and

selecting a determined work item that has a best combined score of its business value and work item treatment value, to be served by the resource.

60. (currently amended) A method of selecting a work item for a resource, comprising:

determining by processor available work items that need skills possessed by the resource;

for each of the determined work items, determining by processor a weighted business value WSBV of having the resource n service the work item, as a product of (a) the business value weight W_{WSBV} or $WWSBV_n$ corresponding to the work item and (b) a sum $\sum$ of products of a level $A_{1,i}$ of each said needed skill i of the resource and a weight $BR_{n,i}$ of said needed skill of the work item, the business value being a measure of qualification of the resource for servicing of the work item based on skills of the resource and skill requirements of the work item, wherein $WSBV_n = (W_{WSBV} or WWSBV_n)\sum_{i=1}(A_{1,i} x BR_{n,i})$;

for each of the determined work items, determining by processor a weighted value WTV to the work item of being serviced by the resource, as a product of (c) a work item treatment weight W_{CV} or $WWTV_n$ corresponding to the work item and (d) a sum $\sum$ of products of a value $C_{n,i}$ of each treatment i of the work item and a weight $CW_{n,i}$ of said treatment of the work item, wherein $WTV_n = (W_{CV} or WWTV_n)\sum_{i=1}(C_{n,i} x CW_{n,i})$, the value to the work item being a measure of how the work item is treated compared to other work items and treatment goals of the individual work item and comprising a time that the work item has been waiting for service, a time by which the work item has exceeded its target wait time, and an estimated time that the work item will have to wait for service comprising a product of (e) a ratio of a total number of work items waiting for service and an average number of work items waiting for service and (f) a sum of

average wait times of individual said needed skills each weighted by a ratio of the weight of said individual skill and a sum of the weights of the needed skills; and

selecting by processor a determined work item that has a best combined value of the weighted business value and the weighted value to the work item to be served by the resource.

61. (currently amended) A computer-readable medium containing instructions which, when executed in a computer, cause the computer to perform selection of a work item for a resource, comprising:

determining available work items that need skills possessed by the resource;

for each of the determined work items, determining a weighted business value *WSBV* of having the resource *n* service the work item, as a product of (a) the business value weight W_{WSBV} *or* $WWSBV_n$ corresponding to the work item and (b) a sum $\sum$ of products of a level $A_{1,i}$ of each said needed skill *i* of the resource and a weight $BR_{n,i}$ of said needed skill of the work item, the business value being a measure of qualification of the resource for servicing of the work item based on skills of the resource and skill requirements of the work item, *wherein* $WSBV_n = (W_{WSBV} or WWSBV_n)\sum_{i=1}(A_{1,i} x BR_{n,i})$;

for each of the determined work items, determining a *weighted* value *WTV* to the work item of being serviced by the resource, as a product of (c) a work

item treatment weight $W_{CV}orWWTV_n$ corresponding to the work item and (d) a sum $\sum$ of products of a value $C_{n,i}$ of each treatment i of the work item and a weight $CW_{n,i}$ of said treatment of the work item, wherein $WTV_n = (W_{CV}orWWTV_n)\sum_{i=1}(C_{n,i}xCW_{n,i})$, the value to the work item being a measure of how the work item is treated compared to other work items and treatment goals of the individual work item and comprising a time that the work item has been waiting for service, a time by which the work item has exceeded its target wait time, and an estimated time that the work item will have to wait for service comprising a product of (e) a ratio of a total number of work items waiting for service and an average number of work items waiting for service and (f) a sum of average wait times of individual said needed skills each weighted by a ratio of the weight of said individual skill and a sum of the weights of the needed skills; and

selecting a determined work item that has a best combined value of the weighted business value and the weighted value to the work item to be served by the resource.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Michael C. Heck whose telephone number is (571) 272-6730. The Examiner can normally be reached Monday thru Friday between the hours of 8:30am - 4:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq R. Hafiz can be reached on (571) 273-6729.

Any response to this action should be mailed to:

Director of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

Or faxed to:

(571) 273-8300	[Official communications; including After Final communications labeled "**Box AF**"]
(571) 273-6730	[Informal/Draft communication, labeled "**PROPOSED**" or "**DRAFT**"]

mch
01 November 2005

TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

REASONS FOR ALLOWANCE

1. Claims 1-24, 27-31 and 36-61 are allowed.

2. The following is an examiner's statement of reasons for allowance:

The present invention of method claims 1, 9, 13, 21 and 60 with their corresponding claims for an apparatus and a computer-readable medium disclose an arrangement for resource and work-item selection. Claim 1 discloses determining by processor available resources that possess skills needed by the work item; for each of the determined resources, determining by processor a business value RSBV of having the resource service the work item, the business value being a measure of qualification of the resource for servicing the work item based on skills of the resource and skill requirements of the work item, wherein $RSBV_n = \sum_{i=1}(A_{n,i} x BR_{1,i})$, where $A_{n,i}$ represents the skill level of resource *n* for skill *i*, and $BR_{1,i}$ represents a skill weight for the work item for skill *i*, across all defined skills; for each of the determined resources, determining by processor a value RTV to the resource of servicing the work item, the value to the resource being a measure of how serving the work item by the resource helps or hurts goals of the individual resource, wherein $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$, where $T_{n,i}$ represents a value of resource *n* for a resource treatment *i*, and $TW_{n,i}$ represents a weight of resource *n* for resource treatment *i*, across all resource treatments; and selecting by processor a determined resource that has a best combined value of the business value and the value to the resource, to serve the work item. Claim 9 discloses determining by processor available resources that possess skills needed by the work item; for each of

the determined resources, determining by processor a business value RSBV comprising a sum $\sum$ across all skills *i* of a product of a skill level $A_{n,i}$ of the resource *n* in the skill and a skill weight $BR_{1,i}$ of the work item for the skill, *wherein* $RSBV_n = \sum_{i=1}(A_{n,i} x BR_{1,i})$; for each of the determined resources, determining by processor a resource treatment value *RTV*, the resource treatment value being a measure of how the resource is meeting goals of the individual resource, the resource treatment value comprising a sum $\sum$ across all of a plurality of resource treatments *i* of a product of a value $T_{n,i}$ of the resource *n* for the resource treatment and a weight $TW_{n,i}$ of the work item for how much weight said resource treatment has relative to others of the resource treatments, *wherein* $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$; and selecting by processor a determined resource that has a best combined score of its business value and its resource treatment value, to serve the work item. Claim 13 discloses determining by processor available work items that need skills possessed by the resource; for each of the determined work items, determining by processor a business value *WSBV* of having the resource service the work item, the business value being a measure of qualification of the resource for servicing of the work item based on skills of the resource and skill requirements of the work item, *wherein* $WSBV_n = \sum_{i=1}(A_{1,i} x BR_{n,i})$, *where* $A_{1,i}$ *represents the skill level of the resource for skill i, and* $BR_{n,i}$ *represents a skill weight for the work item n for skill i, across all defined skills*; for each of the determined work items, determining by processor a value *WTV* to the work item of being serviced by the resource, the value to

the work item being a measure of how the work item is meeting goals of the individual work item, wherein $WTV_n = \sum_{i=1}(C_{n,i} x CW_{n,i})$, *where* $C_{n,i}$ *represents a value of a work item n for a work item treatment i, and* $CW_{n,i}$ *represents a weight of work item n for work item treatment i, across all work item treatments*; and selecting by processor a determined work item that has a best combined value of the business value and the value to the work item to be served by the resource. Claim 21 discloses determining by processor available work items that need skills possessed by the resource; for each of the determined work items, determining by processor a business value *WSBV* comprising a sum $\sum$ across all skills *i* of a product of a skill level $A_{1,i}$ of the resource *n* in the skill and a skill weight $BR_{n,i}$ of the work item for the skill, *wherein* $WSBV_n = \sum_{i=1}(A_{1,i} x BR_{n,i})$; for each of the determined work items, determining by processor a work item treatment value *WTV*, the work item treatment value being a measure of how the work item is meeting goals of the individual work item, the work item treatment value comprising a sum $\sum$ across all of a plurality of work item treatments *i* of a product of the value $C_{n,i}$ of the work item for the work item treatment and a weight $CW_{n,i}$ of the work item for how much weight said work item treatment has relative to others of the work item treatments, *wherein* $WTV_n = \sum_{i=1}(C_{n,i} x CW_{n,i})$; and selecting by processor a determined work item that has a best combined score of its business value and work item treatment value, to be served by the resource. Claim 60 discloses determining by processor available work items that need skills possessed by the resource; for each of the determined work

items, determining by processor a weighted business value *WSBV* of having the resource *n* service the work item, as a product of (a) the business value weight $W_{WSBV} or\ WWSBV_n$ corresponding to the work item and (b) a sum $\sum$ of products of a level $A_{1,i}$ of each said needed skill *i* of the resource and a weight $BR_{n,i}$ of said needed skill of the work item, the business value being a measure of qualification of the resource for servicing of the work item based on skills of the resource and skill requirements of the work item, *wherein* $WSBV_n = (W_{WSBV} or WWSBV_n)\sum_{i=1}(A_{1,i} x BR_{n,i})$; for each of the determined work items, determining by processor a weighted value *WTV* to the work item of being serviced by the resource, as a product of (c) a work item treatment weight $W_{CV} or WWTV_n$ corresponding to the work item and (d) a sum $\sum$ of products of *a value* $C_{n,i}$ *of* each treatment *i* of the work item and a weight $CW_{n,i}$ of said treatment of the work item, *wherein* $WTV_n = (W_{CV} or WWTV_n)\sum_{i=1}(C_{n,i} x CW_{n,i})$, the value to the work item being a measure of how the work item is treated compared to other work items and treatment goals of the individual work item and comprising a time that the work item has been waiting for service, a time by which the work item has exceeded its target wait time, and an estimated time that the work item will have to wait for service comprising a product of (e) a ratio of a total number of work items waiting for service and an average number of work items waiting for service and (f) a sum of average wait times of individual said needed skills each weighted by a ratio of the weight of said individual skill and a sum of the weights of the needed skills; and selecting by processor

a determined work item that has a best combined value of the weighted business value and the weighted value to the work item to be served by the resource.

The closest prior art Business Editors et al. (Business Editors et al., Lucent Technologies Unveils Breakthrough Call Center Software That Improves Customer Care, Increases Sales and Reduces Costs, Business Wire, 4 February 1998 [PROQUEST]) teach CentreVu® Advocate and CentreVu® Virtual Routing of Lucent Technologies, which is an expert system software developed by Bell Laboratories that uses five predictive algorithms to solve the primary problem all call centers face: How to simultaneously provide individual customer care faster, leverage agent expertise and time more effectively, increase revenue, reduce operating expenses, and simplify call center management. The five predictive algorithms are Predicted Wait Time, Service Level Supervisor, Least Occupied Agent, Service Objective, and Percent Allocation. CentreVu® Advocate simultaneously looks at the needs of callers, their potential business value and desire to wait, analyzes the skill of the agents and predicts how soon they will likely become available; then decides which agent should be matched to callers, regardless of their position in the queue. CentreVu® Advocate and CentreVu® Virtual Routing automatically anticipate, control and optimize the allocation of call center resources to minimize call wait times; reduce the number of abandoned calls; lower network costs; and balance workloads while matching callers with the agents who can best serve their needs. CentreVu® Advocate makes real-time decisions – the best decisions every time – based on a business's objectives for the various levels of care it wants to give customers, how it wants to optimize agent skills and time, its sales goals,

and the expense it is willing to allocate to meet those objectives. Once these objectives are programmed into the software, CentreVu® Advocate will consider all variables – the time a caller will likely wait, the media through which the call has come in (phone, Internet, fax, video, e-mail), when the agent with the best skill set for the customer will become available, tiers of service, call volume, sales goals – to determine the best and fairest use of the agent and the best call to take that will bring the greatest value to the business at that time. The CentreVu® Advocate User Guide (CentreVu® Advocate User Guide, Issue 1, May 1998, Copyright© 1998 Lucent Technologies) teaches there are two situations in which CentreVu® Advocate features are used: one or more agents available for the incoming call, and one or more queues with calls when an agent becomes available. A call selection occurs any time that more calls are coming into a call center than there are agents to handle them. Conversely, an agent selection occurs any time there are more available agents than calls coming into the call center. This situation gives the opportunity to route calls to the most preferential agent in a particular skill. Percent Allocation allows you to assign a percentage of an agent's time to each of their assigned skills to total 100% of their staffed time. Percent Allocation compares an agent's work time in each assigned skill, expressed as a percentage of staffed time, against an administered percentage allocation for each of the agent's assigned skills to determine which call to select when an agent becomes available. After accessing an agent entry, that agent's call handling preferences can be administered to be Percent Allocation. Percent Allocation is designed to solve the problem of specifying the amount of time agents will spend in each of their skills. With Percent Allocation, calls are

selected to best match the agent's assigned skill mix. When call selection override is on, agents will receive calls based on their assigned call handling preference as long as the skills are in an under-threshold state. When call selection override is off, agents always handle calls based on their assigned call handling preference. Call Center administrators may have many different objectives for matching callers with agents. In order to meet these objectives, call centers often have individual agents assigned to many different skills. Some general call center business needs include: match caller with most qualified agent, build stronger relationships with some customers, improve overall call center efficiency, help schedule agents with multiple skills, treat agents the same, treat some agents differently, improve agent fairness, and automate supervisor actions. CentreVu® Advocate features are designed to help achieve the goals that are most important. Objectives (i.e., achieving business objectives, controlling average speed of answer (ASA), controlling abandonments, controlling percent in service level, and managing agents) have goals assigned to them (i.e., maximizing revenues, increasing customer satisfaction, increasing agent satisfaction, equalizing percent in service level across skills, control the amount of time agents spend in each of their skills, and evenly distribute the workload among all agents). As to claims 1 and 9, Business Editors et al. and the CentreVu® Advocate User Guide and the prior art of record fail to teach or suggest that for each of the determined resources, determining by processor a value RTV to the resource of servicing the work item, the value to the resource being a measure of how serving the work item by the resource helps or hurts goals of the individual resource, wherein $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$, where $T_{n,i}$ represents a

value of resource *n* for a resource treatment *i*, and $TW_{n,i}$ represents a weight of resource *n* for resource treatment *i*, across all resource treatments and selecting a determined resource that has a best combined value of the business value and the value to the resource, to serve the work item. Of the five algorithms of CentreVu® Advocate, Percent Allocation, Service Objective, Predicted Wait Time, and Service Level Supervisor are call-selection methods that do not calculate a value to the resource, therefore, they do not apply. Least Occupied Agent is an agent-selection method is based on agent occupancy or the total time any agent has with one or more ACD calls for any of an agent's assigned skills and optionally, the total ACW time for any of the agent's assigned skills divided by the total time staffed in any assigned skills, therefore does not anticipate the claim limitations. As to claims 13 and 21, Business Editors et al. and the CentreVu® Advocate User Guide and the prior art of record fail to teach or suggest determining a value *WTV* to the work item of being serviced by the resource, the value to the work item being a measure of how the work item is meeting goals of the individual work item, wherein $WTV_n = \sum_{i=1}(C_{n,i} x CW_{n,i})$, *where* $C_{n,i}$ *represents a value of a work item n for a work item treatment i, and* $CW_{n,i}$ *represents a weight of work item n for work item treatment i, across all work item treatments* and selecting a determined work item that has a best combined value of the business value and the value to the work item to be served by the resource. Of the five algorithms of CentreVu® Advocate, Percent Allocation, Service Objective, Predicted Wait Time, and Service Level Supervisor are call-selection methods only calculate a value to the

business and not a value to the work item or customer. As to claim 60, Business Editors et al. and the CentreVu® Advocate User Guide and the prior art of record fail to teach or suggest determining a weighted business value *WSBV* of having the resource *n* service the work item, as a product of (a) the business value weight W_{WSBV} *or* $WWSBV_n$ corresponding to the work item and (b) a sum $\sum$ of products of a level $A_{1,i}$ of each said needed skill *i* of the resource and a weight $BR_{n,i}$ of said needed skill of the work item, and selecting a determined work item that has a best combined value of the weighted business value and the weighted value to the work item to be served by the resource. Of the five algorithms of CentreVu® Advocate, Percent Allocation is a weighting, however only applied to assigning a percentage of agent's time to each of the assigned skills to total 100% of their staffed time. In other words, the five algorithms of CentreVu® Advocate do not require each treatment of a work item to be weighted relative to other treatments of the work item and relative to the weight of the business value.

Bushey et al. (U.S. Patent 6,389,400) in combination with Business Editors et al. (Business Editors et al., Lucent Technologies Unveils Breakthrough Call Center Software That Improves Customer Care, Increases Sales and Reduces Costs, Business Wire, 4 February 1998 [PROQUEST]) and the CentreVu® Advocate User Guide (CentreVu® Advocate User Guide, Issue 1, May 1998, Copyright© 1998 Lucent Technologies) teach the behavioral model of the customer is calculated from a detailed profile of the customer's needs, task objective, sales preferences, and expectations for satisfaction. Each task objective attribute and each customer expectations for

satisfaction attribute are assigned a weighting value based on a relative importance of each attribute. The behavioral model of the at least two agents is calculated from a detailed profile of the at least two agents' sales strategies, customer service behaviors, and sales performance. Each sales strategies attribute, customer service behavior attribute, and sales performance attribute is assigned a weighting value based on a relative importance of each attribute. A list of optimal agents is generated based on the match scores of the at least two agents that are above an optimal threshold. The request from the customer is routed to an available agent on the list of optimal agents. As to claims 1 and 9, Bushey et al. in combination with Business Editors et al. and the CentreVu® Advocate User Guide and the prior art of record fail to teach or suggest that for each of the determined resources, determining by processor a value RTV to the resource of servicing the work item, the value to the resource being a measure of how serving the work item by the resource helps or hurts goals of the individual resource, wherein $RTV_n = \sum_{i=1}(T_{n,i} x TW_{n,i})$, where $T_{n,i}$ represents a value of resource *n* for a resource treatment *i*, and $TW_{n,i}$ represents a weight of resource *n* for resource treatment *i*, across all resource treatments and selecting a determined resource that has a best combined value of the business value and the value to the resource, to serve the work item. As to claims 13 and 21, Bushey et al. in combination with Business Editors et al. and the CentreVu® Advocate User Guide and the prior art of record fail to teach or suggest determining a value *WTV* to the work item of being serviced by the resource, the value to the work item being a measure of how the work

item is meeting goals of the individual work item, wherein $WTV_n = \sum_{i=1}(C_{n,i} x CW_{n,i})$, *where* $C_{n,i}$ *represents a value of a work item n for a work item treatment i, and* $CW_{n,i}$ *represents a weight of work item n for work item treatment i, across all work item treatments* and selecting a determined work item that has a best combined value of the business value and the value to the work item to be served by the resource. As to claim 60, Bushey et al. in combination with Business Editors et al. and the CentreVu® Advocate User Guide and the prior art of record fail to teach or suggest determining a weighted business value *WSBV* of having the resource *n* service the work item, as a product of (a) the business value weight W_{WSBV} *or* $WWSBV_n$ corresponding to the work item and (b) a sum $\sum$ of products of a level $A_{1,i}$ of each said needed skill *i* of the resource and a weight $BR_{n,i}$ of said needed skill of the work item, and selecting a determined work item that has a best combined value of the weighted business value and the weighted value to the work item to be served by the resource.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

- MATSUO et al. (JP 08137811 A) disclose a network resources allocation alternation method for electrical information communication network.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Michael C. Heck whose telephone number is (571) 272-6730. The Examiner can normally be reached Monday thru Friday between the hours of 8:30am - 4:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq R. Hafiz can be reached on (571) 273-6729.

Any response to this action should be mailed to:

Director of the United States Patent and Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

Or faxed to:

(571) 273-8300	[Official communications; including After Final communications labeled "**Box AF**"]
(571) 273-6730	[Informal/Draft communication, labeled "**PROPOSED**" or "**DRAFT**"]

mch
01 November 2005

TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600